Glenair Composite Connector and Accessory Glass Fiber Additives

Glass-filled composite thermoplastic resins in pellet form, ready for use in injection molding applications.

Generally, when we speak of "composites," we refer to materials containing fibers, primarily glass, impregnated within a plastic resin or "matrix". This combination produces strong, lightweight, corrosion-resistant and dimensionally stable materials. Such materials also provide design flexibility and high dielectric strength.

Glass fiber and resin complement each other well. Just as a metallurgist might combine tin and copper to produce bronze—a material which is much stronger than either base metal by itself— combining glass fiber with a resin matrix results in a material that is more useful than either of its constituent components is on its own.

Certain plastics are extremely strong yet subject to cracking or other forms of stress-related damage. When the plastic matrix is augmented with glass fibers, a wide range of performance benchmarks can be achieved including improved wear-resistance, crush-resistance, and dimensional stability.

Glenair composite interconnect components are principally manufactured from 30% glass fiber polyetherimide (PEI), an amorphous thermoplastic with outstanding heat and chemical resistance and high strength. At room temperature the 30% glass filled PEI exhibits strength far beyond that of most engineering thermoplastics, with a tensile strength yield of over 15,000 psi. The PEI material meets the most stringent outgassing and flammability requirements.

Composite Thermoplastic Vs. Common Metal Materials

Material	Specific Gravity	Density (lbs. Inch^3)	Salt Spray
Composite	**1.27 - 1.51**	**.055**	**2000+ Hrs**
Aluminum	**2.55 - 2.80**	**.098**	**48-1000 Hrs**
Titanium	**4.51 - 4.62**	**.162**	**500-1000 Hrs**
Stainless Steel	**7.70 - 7.73**	**.284**	**500-1000 Hrs**
Brass	**8.40 - 8.70**	**.305**	**500-1000 Hrs**